## SUPPLEMENTAL MATERIAL

Table S1. Search strategy for Medline(R) (1946-most recent) and Embase (Embase+Embase Classic)

1	Human/				
2	(bibliography or case reports or clinical conference or conference abstract or conference				
	paper or conference proceeding or "conference review" or clinical trial, all or comment or				
	congresses or editorial or guideline or in vitro or letter or meta analysis or "review" or				
	systematic reviews).pt.				
3	1 NOT 2				
	Method terms				
4	exp Case-Control Studies/ or case control.mp.				
5	exp cohort studies/ or exp follow-up studies/ or exp longitudinal studies/ or exp prospective				
	studies/ or exp retrospective studies/ or cohort study.mp.				
6	4 or 5				
	Alcohol terms				
7	exp Alcohol Drinking/				
8	exp Alcoholic Intoxication/				
9	exp binge drinking/				
10	(alcohol* adj3 (drink* or consum* or intake)).mp.				
11	heavy drinking.mp.				
12	alcoholic beverages/				
13	OR/7-12				
	Disease terms				
14	hypertension/				
15	high blood pressure.mp.				
16	elevated blood pressure.mp.				
17	hypertens\$.tw.				
18	exp resistant hypertension/				
19	resistant hypertension.mp.				
20	OR/14-19				
21	3 AND 6 AND 13 AND 20				
22	remove duplicates from 21				

~ .	Bias due to	Bias in selection of participants	Bias in classification	Bias due to	Bias in measurement	Bias in selection of the reported	Overall risk of
Study Ascherio et al., 1996 <sup>1</sup>	confounding ++	into the study +	of exposures +	missing data +	of outcomes	result +	bias Moderate
Bae et al., 2014 <sup>2*</sup>	+++	++	+	+	++	+	Serious
Bai et al., 2017 <sup>3</sup>		+	+	+++	+		Serious
	++					+	
Banda et al., 2010⁴	++	++	+	+	++	+	Moderate
Diederichs et al., 2016⁵	++	+	+	+	+	+	Moderate
Forman et al., 20096	+	+	+	++	++	+	Moderate
Fuchs et al., 2001 <sup>7</sup>	++	+	+	+	+	+	Moderate
Halanych et al., 2010 <sup>8</sup>	++	+	+	+	+	+	Moderate
Nakanishi et al., 2001 <sup>9</sup>	++	++	+	+	+	+	Moderate
Nakanishi et al., 200210	++	++	+	+	+	+	Moderate
Niskanen et al., 200411	+	+	+	+	+	+	Low
Ohmori et al., 200212	++	+	+	+	+	+	Moderate
Okubo et al., 201413	++	+	+	++	+	+	Moderate
Onat et al., 200814	++	+	+	++	+	+	Moderate
Peng et al., 2013 <sup>15</sup>	++	++	+	+	++	+	Moderate
Sesso et al., 200816	++	+	+	++	++	+	Moderate
Thawornchaisit et al., 2013 <sup>17</sup> ±	++	++	++	++	++	+	Moderate
Wang et al., 2011 <sup>18*</sup>	++	+	+	+	+	+	Moderate
Witteman et al., 1989 <sup>19</sup> , 1990 <sup>20</sup>	++	+	+	+	++	+	Moderate

## **Table S2.** The Risk Of Bias in Non-randomized Studies – of Interventions (ROBINS-I) assessment tool, modified version

\*Nested-case-control studies. + = low risk of bias; ++ = moderate risk of bias; +++ = serious risk of bias.

± Only the relative risk for former drinkers was used.

% Study RR (95% CI) Weight Women Bai et al., 20173 0.82 (0.60, 1.12) 18.68 Wang et al., 2011<sup>18</sup> white 1.02 (0.78, 1.35) 21.73 Wang et al., 2011<sup>18</sup> black 1.20 (0.97, 1.47) 33.43 Halanych et al., 20108 white 0.59 (0.23, 1.52) 2.43 Halanych et al., 20108 black 1.27 (0.74, 2.17) 7.14 Thawornchaisit et al., 201317 1.14 (0.82, 1.59) 16.60 Subtotal (I-squared = 18.7%, p = 0.292) 1.06 (0.91, 1.23) 100.00 . Men Thawornchaisit et al., 201317 0.98 (0.74, 1.30) 42.98 Halanych et al., 20108 black 0.66 (0.26, 1.67) 7.18 Halanych et al., 2010<sup>8</sup> white ➡ 2.75 (0.80, 9.46) 4.19 Ohmori et al., 200212 1.89 (0.72, 4.96) 6.68 ≻ Bai et al., 2017<sup>3</sup> 0.94 (0.69, 1.28) 38.97 Subtotal (I-squared = 23.0%, p = 0.268) 1.02 (0.79, 1.33) 100.00 Overall (I-squared = 14.2%, p = 0.309) 1.04 (0.92, 1.18) Т .25 1.5 .5 .75

1

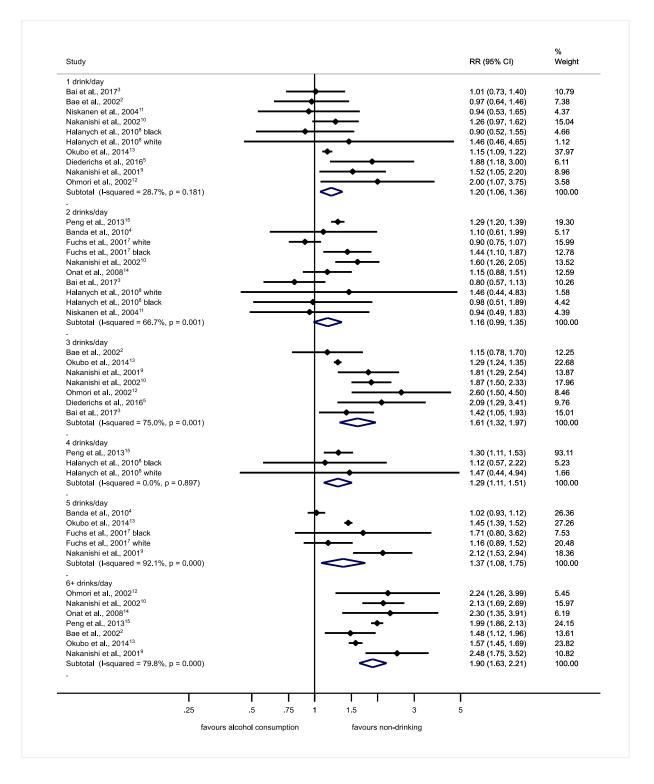
favours former drinking

favours lifetime abstention

3

Figure S1. Incidence of hypertension in former drinkers compared to lifetime abstainers at baseline by sex, 1989-2017

**Figure S2.** Incidence of hypertension in men by alcohol intake in standard drinks at baseline compared to abstainers, all studies, 1989-2017



1 standard drink = 12 grams pure ethanol per day.

**Figure S3.** Incidence of hypertension in women by alcohol intake in standard drinks at baseline compared to abstainers, all studies, 1989-2017

Study	RR (95% CI)	% Weight
1 drink/day		
Wang et al., 2011 <sup>18</sup> black	1.09 (0.93, 1.28)	8.75
Bai et al., 2017 <sup>3</sup>	0.83 (0.50, 1.37)	1.75
Ascherio et al., 1996 <sup>1</sup>	0.94 (0.85, 1.03)	12.86
Witteman et al., 1989 <sup>19</sup>	0.92 (0.84, 1.00)	13.36
Forman et al., 2009 <sup>6</sup>	0.87 (0.84, 0.90)	16.06
Diederichs et al., 2016 <sup>5</sup>	▲ 1.76 (1.09, 2.83)	1.90
Sesso et al., 2008 <sup>16</sup> ◆	0.96 (0.92, 1.00)	15.95
Wang et al., 2011 <sup>18</sup> white	0.96 (0.79, 1.16)	7.38
Halanych et al., 2010 <sup>8</sup> white	0.43 (0.24, 0.75)	1.40
Halanych et al., 2010 <sup>8</sup> black	0.87 (0.67, 1.12)	5.20
Okubo et al., 2014 <sup>13</sup>	1.05 (1.00, 1.11)	15.39
Subtotal (I-squared = 81.2%, p = 0.000)	0.95 (0.89, 1.02)	100.00
2 drinks/day		
Ascherio et al., 1996 <sup>1</sup>	1.09 (0.96, 1.24)	13.24
Witteman et al., 1989 <sup>19</sup>	1.13 (1.01, 1.26)	14.53
Fuchs et al., 2001 <sup>7</sup> black	0.91 (0.68, 1.22)	5.32
Fuchs et al., 2001 <sup>7</sup> white	0.91 (0.76, 1.08)	10.33
Onat et al., 2008 <sup>14</sup>		1.54
Forman et al., 2009 <sup>6</sup> → → → → → → → → → → → → → → → → → → →	1.02 (0.96, 1.08) 0.39 (0.15, 0.99)	18.03 0.69
Diederichs et al., 2016 <sup>5</sup>	→ 0.39 (0.15, 0.99) 1.81 (0.97, 3.35)	1.50
Halanych et al., 2010 <sup>8</sup> black	0.72 (0.43, 1.21)	2.08
Halanych et al., 2010 <sup>8</sup> white	0.25 (0.10, 0.64)	0.68
Sesso et al., 2008 <sup>16</sup>	0.96 (0.87, 1.06)	15.42
Wang et al., 2011 <sup>18</sup> white	0.97 (0.85, 1.10)	13.07
Wang et al., 2011 <sup>18</sup> black	1.03 (0.71, 1.51)	3.56
Subtotal (I-squared = 54.7%, p = 0.009)	1.00 (0.92, 1.08)	100.00
3 drinks/day		
Ascherio et al., 1996 <sup>1</sup>	<b>-</b> 1.46 (1.21, 1.76)	20.41
Witteman et al., 1989 <sup>19</sup>	<b>—</b> 1.47 (1.23, 1.76)	20.84
Okubo et al., 2014 <sup>13</sup>	1.10 (1.03, 1.17)	30.14
Sesso et al., 2008 <sup>16</sup>	1.10 (0.97, 1.25)	25.44
Bai et al., 2017 <sup>3</sup>	1.16 (0.55, 2.45)	3.17
Subtotal (I-squared = 74.3%, p = 0.004)	1.24 (1.08, 1.43)	100.00
4 drinks/day		
Ascherio et al., 1996 <sup>1</sup>	1.32 (1.11, 1.57)	29.24
Witteman et al., 1989 <sup>19</sup>	← 1.70 (1.46, 1.98)	32.77
Forman et al., 2009 <sup>6</sup>	► 1.61 (1.42, 1.82)	37.99
Subtotal (I-squared = 60.3%, p = 0.081)	> 1.55 (1.35, 1.77)	100.00
5 drinks/day		
Okubo et al., 2014 <sup>13</sup>	1.14 (0.93, 1.40)	39.66
Fuchs et al., 2001 <sup>7</sup> white	◆ 1.74 (1.11, 2.74)	26.01
Sesso et al., 2008 <sup>16</sup>		34.33
Subtotal (I-squared = 74.6%, p = 0.019)	1.50 (1.06, 2.13)	100.00
6+ drinks/day		
Okubo et al., 2014 <sup>13</sup>	<b>—</b> 1.29 (0.89, 1.87)	100.00
Subtotal (I-squared = .%, p = .)	<b>&gt;</b> 1.29 (0.89, 1.87)	100.00
·		
.25 .5 .75 1 1.5	3 5	
favours alcohol consumption fav	ours non-drinking	

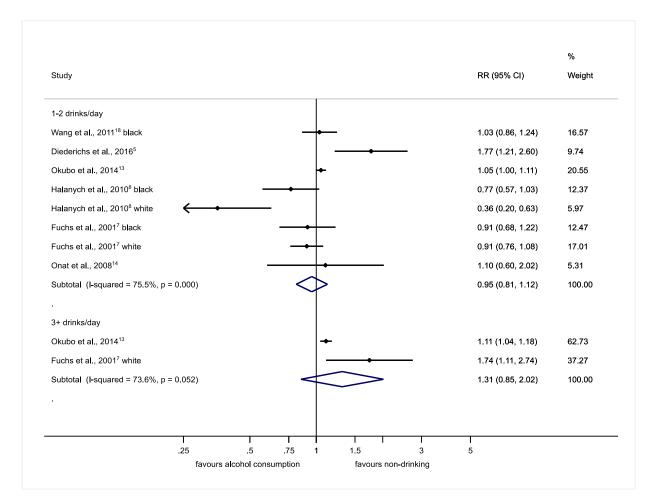
1 standard drink = 12 grams pure ethanol per day.

**Figure S4.** Incidence of hypertension in men by alcohol intake in standard drinks at baseline compared to abstainers in cohort studies with clinical measurement of blood pressure and low or moderate risk of bias, 1989-2017

Study				RR (95% CI)	% Weigh
1-2 drinks/day					
Okubo et al., 2014 <sup>13</sup>	-	←		1.15 (1.09, 1.22)	19.16
Diederichs et al., 2016 <sup>5</sup>				1.88 (1.18, 3.00)	3.92
Nakanishi et al., 2002 <sup>10</sup>		<b>—</b>		1.42 (1.14, 1.76)	10.73
Nakanishi et al., 2001 <sup>9</sup>	-	•		1.52 (1.05, 2.20)	5.61
Ohmori et al., 2002 <sup>12</sup>	-	•		2.00 (1.07, 3.75)	2.35
Peng et al., 2013 <sup>15</sup>		<b></b>		1.29 (1.20, 1.39)	18.41
Niskanen et al., 2004 <sup>11</sup>				0.94 (0.61, 1.45)	4.41
Halanych et al., 2010 <sup>8</sup> white		•		1.46 (0.61, 3.51)	1.28
Halanych et al., 2010 <sup>8</sup> black	<b>+</b>			0.93 (0.61, 1.42)	4.50
Fuchs et al., 2001 <sup>7</sup> white	<b>_</b> +			0.90 (0.75, 1.07)	12.60
Fuchs et al., 2001 <sup>7</sup> black	.	<b></b>		1.44 (1.10, 1.87)	8.61
Onat et al., 2008 <sup>14</sup>		♠		1.15 (0.88, 1.51)	8.42
Subtotal (I-squared = 64.3%, p = 0.001)		$\diamond$		1.23 (1.11, 1.36)	100.00
3-4 drinks/day				4 00 (4 04 4 05)	05.04
Okubo et al., $2014^{13}$		•		1.29 (1.24, 1.35)	25.31
Nakanishi et al., 2001 <sup>9</sup>				1.81 (1.29, 2.54)	13.33
Nakanishi et al., 2002 <sup>10</sup>			-	1.87 (1.50, 2.33)	18.44
Ohmori et al., 2002 <sup>12</sup>			•	2.60 (1.50, 4.50)	7.50
Diederichs et al., 2016 <sup>5</sup>				2.09 (1.29, 3.41)	8.81
Peng et al., 2013 <sup>15</sup>		<b></b>		1.30 (1.11, 1.53)	21.20
Halanych et al., 2010 <sup>8</sup> black			•	1.12 (0.57, 2.22)	5.40
Subtotal (I-squared = 74.6%, p = 0.001)		$\sim$		1.58 (1.32, 1.89)	100.00
- 5+ drinks/day					
Fuchs et al., 2001 <sup>7</sup> black	-+-	•		1.71 (0.80, 3.62)	4.04
Fuchs et al., 2001 <sup>7</sup> white	-+-	◆───		1.16 (0.89, 1.52)	14.16
Ohmori et al., 2002 <sup>12</sup>			•	2.24 (1.26, 3.99)	6.12
Nakanishi et al., 2002 <sup>10</sup>				2.13 (1.69, 2.69)	15.77
Onat et al., 2008 <sup>14</sup>			◆	2.30 (1.35, 3.91)	6.89
Okubo et al., 2014 <sup>13</sup>	1	<b>—</b>		1.51 (1.26, 1.80)	17.97
Peng et al., 2013 <sup>15</sup>	1	+		1.99 (1.86, 2.13)	21.80
Nakanishi et al., 2001 <sup>9</sup>			•	2.25 (1.67, 3.02)	13.26
Subtotal (I-squared = 71.0%, p = 0.001)		$\diamond$		1.82 (1.54, 2.15)	100.00
.25 .5	.75 1	1.5	3	5	
	onsumption		n-drinking		

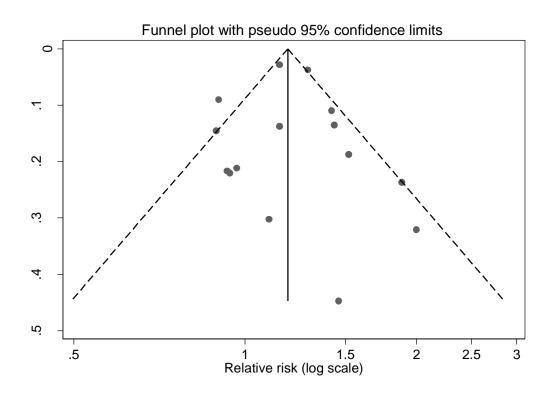
1 standard drink = 12 grams pure ethanol per day. RR = relative risk.

**Figure S5.** Incidence of hypertension in women by alcohol intake in standard drinks at baseline compared to abstainers in cohort studies with clinical measurement of blood pressure and low or moderate risk of bias, 1989-2017

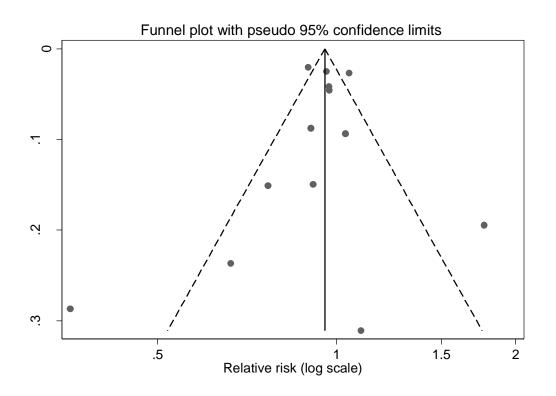


1 standard drink = 12 grams pure ethanol per day.

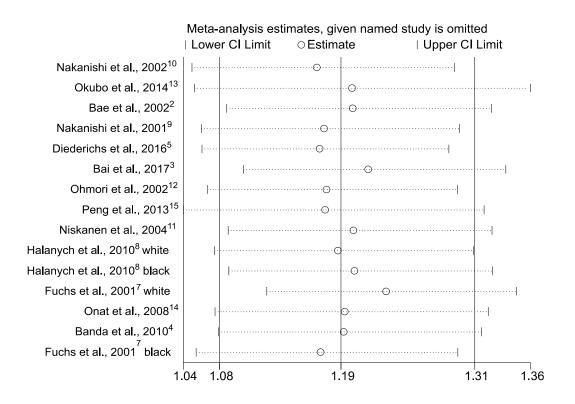
**Figure S6.** Funnel plot for 1-2 drinks/day alcohol intake at baseline compared to abstainers in men, 1989-2017



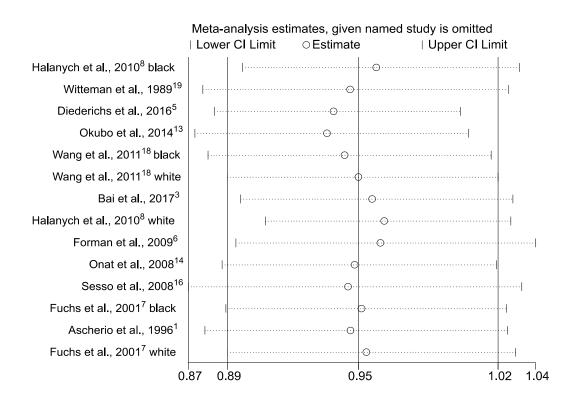
Horizontal axis shows study effects (logRR), vertical axis shows study precision (standard error of RR). Each dot represents an individual study. Vertical line shows pooled effect (random-effect model). **Figure S7.** Funnel plot for 1-2 drinks/day alcohol intake at baseline compared to abstainers in women, 1989-2017



Horizontal axis shows study effects (logRR), vertical axis shows study precision (standard error of RR). Each dot represents an individual study. Vertical line shows pooled effect (random-effect model). **Figure S8.** Influence of omitting a single study for 1-2 drinks/day alcohol intake at baseline compared to abstainers in men, 1989-2017



**Figure S9.** Influence of omitting a single study for 1-2 drinks/day alcohol intake at baseline compared to abstainers in women, 1989-2017



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